

COUNTY OF WIGTOWN

FIRST ANNUAL REPORT

ON THE

MEDICAL INSPECTION
OF SCHOOL CHILDREN

1912-1913

By

MARY JANET PIRRET, M.D., D.P.H.,

SCHOOL MEDICAL OFFICER

GLASGOW

JAMES MACLEHOSE AND SONS

PUBLISHERS TO THE UNIVERSITY

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*To the Chairman and Members
of the Secondary Education Committee
of the County of Wigtown.*

STRANRAER,
4th September, 1913.

GENTLEMEN,

I beg to submit to you my first Annual Report on the Medical Inspection of School Children.

The routine work of Medical Inspection was begun in the County in May, 1912, and seven weeks' work was completed before the conclusion of the school year 1911-12.

As it was deemed unnecessary in the circumstances to draw up a report for the year 1911-12, a brief summary of the work done and results obtained during the months of May and June has been incorporated with the present report. The organisation of the work of medical inspection in the County has been dealt with somewhat fully in this report, and an account also given of the routine followed in carrying out the medical examination of the children.

During the period of time under review, 3397 children or 58 per cent. of the total number of school children in the County have been medically examined. An account has been given of the results obtained during the past year, and the various defects and conditions which affect adversely the health of the school child have been dealt with in detail.

I am, Gentlemen,

Your obedient Servant,

MARY JANET PIRRET.

REPORT

ORGANISATION OF MEDICAL INSPECTION.

THE work of Medical Inspection has been organised in conformity, as far as possible, with the recommendations made by the Scotch Education Department in their circular dealing with this subject. A complete scheme of Medical Inspection provides for at least four medical examinations of each child during school life. The first examination is made as soon as possible after children are first admitted to school, in order to ascertain their physical condition and general fitness for the routine of school life. The second examination is made at a fixed age period—generally seven years of age—and coincides as a rule with the entrance of children into the junior department of the school. At this time a more minute and satisfactory examination can be made than is possible in the case of very young children. Vision can then be tested for the first time, and any defect detected and remedied before the eyes are subjected to additional strain. Permanent teeth are beginning to appear at this period, and useful advice on this subject may be given ; the mental condition of the child can also be more accurately gauged. The third examination follows three years later, also at a fixed age period—generally ten years of age—which coincides as a rule with the entrance of the child into the senior department of the school. This examination is also a very important one, as it is made at a time when the child has been for several years subjected to the strain of school life, with its many demands on both mind and body. This age period is

one at which rapid growth is taking place, and many pathological conditions in an incipient stage are found. Many children are also found at this age period to have developed defects of vision. The fourth and final examination is made before the children leave school at the age of 14 years, and the importance of this examination lies in the fact that it is thus possible to ascertain the physical condition of all children before they leave school, and give advice regarding their fitness for the special spheres of work which they desire to enter.

It was therefore arranged to carry out these four routine examinations at the following fixed age periods :—

- | | | |
|---------------------------|--|----------------------------|
| (1) 5-6 years (entrants). | | (3) 10-11 years. |
| (2) 7-8 ,, | | (4) 13-14 .. (leavers). |

During the first year of Medical Inspection it is rarely possible to overtake the examination of all the children at these fixed age periods, and some modification of the scheme has accordingly to be made. Children forming the 7-8 year age groups have therefore been omitted during the past year, and the systematic examination of the remaining three groups undertaken, *i.e.* entrants, children between the ages of 10 and 11, and leavers.

The number of school children in the County of Wigtown averages 5855, and of these 3397 (58 per cent.) have now been medically examined. In future it will be possible to overtake the examination of all the children at the fixed age periods, and in this way all the school children in the County will have been medically examined by the end of three years.

In the smaller schools it has been found possible to examine children of other ages in addition to those at the fixed age periods, and in the case of 14 small schools all the scholars have been examined.

In addition to the routine examination of children at these age periods, a large group of children have been presented as "Special Cases." This group is composed of children selected by the teachers on account of defects noticed by them, and which have been exerting an unfavourable influence upon the

school life of the children. As may readily be understood, this group has, during the past year, been a very large one, as the accumulation of years has had to be reckoned with, and every school has contributed a varying proportion of such cases. During the past 14 months 510 such children have been presented. The defects which led to their inclusion in this group have been analysed fully in the Table dealing with this matter.

Under the present scheme of work all the schools in the county are visited at least twice a year, and the majority of schools receive three visits. In this way all entrants are seen and examined within a few weeks of their admission to school and all leavers within a few weeks of leaving school.

Frequent re-examinations can also be made of children who have been recommended for treatment, and who have been excluded from school attendance, and it is possible to keep in much closer touch with a school and its scholars if too long intervals do not elapse between the visits paid to it. In the case of the smaller schools in outlying districts where all the children have already been examined, three visits annually are not required, two regular visits overtaking all the work of examination and re-examination.

Surprise visits have been paid occasionally and have a distinctly beneficial effect. In such cases it is not possible for the parents to make the somewhat elaborate and lengthy preparations which are frequently made in view of a notified visit, and a truer estimate may be formed as to the condition of the children.

Special visits are also paid to schools where infectious disease has broken out, and investigations made to ascertain as far as possible whether any probable source of infection exists among the scholars. Nine such visits have been paid during the past year. In such cases it is frequently necessary to exclude children who are suffering from symptoms which appear suggestive of infectious disease, and to take every precaution to prevent a disease assuming epidemic proportions.

METHOD OF PROCEDURE IN ROUTINE EXAMINATIONS.

Before giving an outline of the routine followed in the medical examination of each child, may I take this opportunity of expressing to all the teachers in the county my grateful thanks for the most courteous and cordial way in which they have assisted in the inauguration of the work. The school medical work has unavoidably added considerably to the work of the teachers, who might readily be pardoned if objections were raised to it on this score. In all cases, however, this additional work has been most cordially undertaken, and in many cases Medical Inspection has been enthusiastically received by the teachers. It is in no small degree due to their hearty co-operation that the school medical work has been organised and carried out during the first year in a uniformly satisfactory and pleasant way, and without experiencing many of the difficulties which might otherwise have arisen.

A printed notice is sent to the head teacher of each school from a week to a fortnight before the proposed visit. This notice states the day and hour of the visit, and the groups of children which will be examined. On receipt of this notice the teacher can if necessary signify that the day selected is for some reason unsuitable, when the date of it is altered. If suitable, arrangements are made accordingly, and two or three days before the date fixed printed notices are sent to all the parents of the children to be examined. This notice states the day and hour at which the child will be examined, a different hour being named in every case, in order that each parent may arrive approximately at the hour at which her child is to be examined—ten minutes or a quarter of an hour being allowed for each child. These notices are printed on a double sheet of paper with perforation at the junction of the pages. On the second sheet the parent is requested to fill in particulars regarding any infectious or other diseases which the child may have had, a printed list of the ordinary infectious diseases being given, and a reply in the affirmative or negative being requested. In this way should the parents not be

present at the examinations, an accurate history for each child has been obtained regarding the common infectious diseases.

Each child is provided with a medical record card, which is intended to furnish as far as possible a complete medical history of each child. On one side of the card there are details regarding name, address, date of birth, etc., the number of rooms in each house and people living therein, and whether or not the child is employed before or after school, are noted. The infectious disease history is copied on to the card and the presence of hereditary disease also made a subject of special note. Space is also left for the entry of any directions given to the parent, and the action taken thereafter. On the other side are the details which are filled in at each medical examination, the height, weight, special senses, and physiological systems of the body, as well as the condition of clothing and cleanliness being all taken up in succession. Space is left on the card to allow of the particulars of four medical examinations being recorded; hence each child retains his original card throughout his school life, and a complete record of his medical history up to the time of leaving school is thus obtained.

White cards are used for the girls, blue for the boys, and pink for the "special cases" of either sex. By this means the latter cards can be easily picked out, which is very advantageous in view of the fact that these "special cases" are called up as a rule for frequent examinations. The medical record cards are kept in each school in a japanned metal box, which is locked, the key being kept by the head teacher. The details on these cards are strictly private, no one having access to them in addition to the School Medical Officer, except the head teachers and school managers. A certain number of particulars on these cards are filled in by the teachers before the arrival of the School Medical Officer.

The question of accommodation is a very difficult one, and in many of the smaller schools it is a matter of great difficulty to provide a suitable room for the work. The teachers have all made the best arrangements possible in the circumstances,

often at great personal inconvenience. In some small country schools which are composed of one room it is possible in fine weather to allow the children to go outside and continue their work there, but in cold stormy weather this is impossible, and it is occasionally necessary to put up a curtain, which screens off a small portion of a class-room, and allows the medical work and ordinary class work to go on simultaneously. As can readily be understood, however, such an arrangement is far from satisfactory to all concerned. Eye testing is also often difficult to carry out in the room in which the children are being examined, as a distance of 20 feet is required. It is often possible, however, to do this in another room, or to gain additional length by opening a door.

Each school in the county has been provided with a weighing machine, measuring rod, and eye testing card.

The children to be examined are taken separately, except in the case of members of the same family, and the examinations are thus carried out without any feeling of publicity on the part of parents or children. Each child enters the room with boots removed, as the universal custom is to weigh and measure the children without boots. The height and weight are then taken, and the vision tested by Snellen's test type cards, which are placed on the wall at a distance of 20 feet. The clothing is then removed as far as the waist, and an examination of the heart and lungs, etc., made. The child is then partially dressed and the remaining portions of the examination made—the teeth, throat, hearing, and mental condition all being examined in turn. Small wooden spatulas similar to the wooden labels used by gardeners are used for the throat examinations—a separate spatula being of course used for each child.

The medical record card is then filled in, numerical symbols being used to signify conditions where this is possible. Three grades are recognised as a rule, and "good," "average," and "bad" are expressed as 1, 2, and 3. If the child is found to be in a condition that renders medical treatment advisable, a slip to this effect is filled in and given to the parent if present, or enclosed in a sealed envelope and given to the child or an

older member of the same family. This slip urges the parents to seek medical advice for their child, and states the condition on account of which medical treatment is advised. A duplicate slip is filled in and given to the head teacher, and a third slip retained by the School Medical Officer.

Cards containing advice regarding the care of the teeth are also freely distributed among the parents at the examinations, and, where necessary, cards containing directions for the treatment of verminous conditions are given or sent to them. When the examinations for the day are completed the medical record cards are taken away by the School Medical Officer, in order that the results may be tabulated according to age and sex. After this is completed the cards are returned to the head teacher, who places them in the locked box. In this box the cards are indexed, the following index system being employed: The children are examined at the fixed age periods, and after examination the card of each is placed under the year in which the next examination falls to be made, and in the age group to which the child will then belong, *e.g.* the card of a child examined at the age of seven years in 1913 is placed in the 10 year age group of 1916. In this way it will be a comparatively easy matter in succeeding years to pick out the cards of children who belong to the fixed age groups of each year in turn.

In the event of children leaving one school for another, the head teacher is requested to forward the medical record cards to the new school. Considerable difficulty has been experienced regarding this transfer of cards. The continual migration of families from one part of the country to another renders this part of the work in many cases troublesome.

Following each visit paid to a school a summary of the results obtained is forwarded to the Clerk of the School Board.

The School Boards in three cases have made arrangements that the district nurse shall assist with the school medical work, and in two other cases the Boards have arranged for other assistance. In the great majority of cases no assistance is provided—in some schools the lady teachers have most kindly volunteered and given efficient help, for which my cordial

thanks are due. Where no assistance is given it has been found impossible to overtake more than four or five examinations per hour, but with assistance seven children can be examined.

In two of the parishes where the nurses assist with the work, the cases are also "followed up" by them, and excellent work in this way is done. The homes of the children are visited by the nurses, and the parents further impressed with the advisability of carrying out the recommendations of the School Medical Officer. Hints regarding the hygiene of the child and of the home may be given, and points touched upon at the medical examination practically demonstrated. All cases where medical treatment has been advised, and all verminous cases, are "followed up" by the nurses, as well as a few other cases where it is deemed advisable. In the majority of the counties one or more county nurses have now been appointed to assist with the school medical work, and such assistance is a most valuable and necessary factor if the medical inspection of school children is to realise its full possibilities.

The heights and weights of the children are taken quarterly by the teachers in a few of the schools, and entered in a book kept for the purpose. This system is an excellent one, and allows fluctuations in the weight of children to be at once detected, and any fall in weight noted and reported to the School Medical Officer. In the larger schools, however, this would entail a considerable addition to the work of busy teachers, and no suggestions are made on this matter, which is entirely optional, and if undertaken, is done so voluntarily. In carrying out the work an endeavour has been made to add as little as possible to the additional work thrown upon the teachers as a result of medical inspection.

At the end of one month after the medical inspection of scholars the head teacher is asked to send a report to the School Medical Officer regarding the children who were recommended for medical treatment, stating in which cases this recommendation has received attention.

At the next medical visit to the school—probably three months later—these children are re-examined in order to

ascertain whether medical attention has been sought and treatment obtained. A full examination is not again made, attention being directed only to the pathological condition formerly discovered. Parents in this case are not notified, the examination of each child only occupying two or three minutes. If it is found that the advice given on the former occasion has been ignored, and that the morbid condition is still present, a second notice is sent to the parents again urging them to obtain medical treatment. Of the recommendations issued advising the parents to obtain medical advice for their children, only 33·7 per cent. received attention, but it is earnestly to be hoped that the results in this respect may in future be more satisfactory.

Attendance of Parents.—The attendance of parents at the medical examinations has been very similar to that in other counties, 44·3 per cent. having been present at the medical inspections during the past year. During the first seven weeks of the work (May and June, 1912), when the five schools in Stranraer were alone being inspected, 71 per cent. of the parents were present. Medical inspection has on the whole been most favourably received in the county. This must be considered as highly satisfactory in view of the fact that it was to most of the people an utterly new and unknown thing. When each school was visited for the first time, a feeling of curiosity was doubtless partially responsible for the presence of parents, but this factor can now be largely eliminated, and it is obvious that many parents have already come to realise the benefits of medical inspection, both to their children and also indirectly to themselves. Every effort is made to secure the interest and co-operation of the parents, which is urgently required in this matter. Until this is obtained, the medical inspection of school children cannot hope to attain the high place to which it is entitled as a potent factor in preventive medicine.

In many village and town schools the attendance of parents is often very small, whereas in remote and outlying schools whose scholars are drawn from a four mile radius, a very large percentage of the parents frequently attend the exam-

inations, often walking several miles in order to be present. It is possible that this may be partially due to the fact that in such places the visit of a doctor is somewhat of a rarity and prized accordingly—the parents appreciating the opportunity thus afforded them of having their children examined, and of being informed regarding any defect from which they may suffer. It is gratifying to record that a large number have specially requested that their children might be examined, while in only a few cases have parents refused to allow the examination to be carried out. The inherent dislike and distrust of anything new which some people possess in a high degree, is probably responsible for many of these refusals, while ignorance, and a mistaken desire to “assert their independence,” are the motives for refusal in other cases. It is to be hoped that greater enlightenment may come, and a clear, sensible view of the whole question may shortly lead to refusals being a thing of the past.

Viewed from the present standpoint, the chief influence of medical inspection is an educative one, and much “missionary work” requires to be done in the fields of hygiene, dietetics, and personal cleanliness. Ignorance, which at times might be termed dense, exists on subjects of every day interest and importance, such as cleanliness, clothing, diet, and the necessity for fresh air and sufficient sleep, while joined to ignorance one has frequently to combat indifference and carelessness. When one enters the field of disease one is confronted with superstitious ideas, family traditions, and individual prejudices; while in the forefront in too many cases poverty and its effects are found.

TABLE GIVING A SUMMARY OF RESULTS IN THE
DIFFERENT SCHOOLS IN THE COUNTY.

Parish.	School.	Number of Children Examined.	Number Re- commended for Treatment.	Number Re-examined.	Number who had obtained Treatment.
TRANRAER	Academy, - - - - -	142	68	104	45
	„ May and June, 1912	132	59		
	High, - - - - -	47	31	46	24
	„ May and June, 1912 -	60	30		
	Sheuchan - - - - -	75	24	67	11
	„ May and June, 1912 -	194	110		
	Lewis Street - - - - -	114	33	107	30
	„ May and June, 1912	182	107		
NCH	St. Joseph's - - - - -	22	4	33	12
	„ May and June, 1912	82	37		
	Lochans - - - - -	45	19	12	2
	Inchparks - - - - -	52	25	11	3
	Cairnryan - - - - -	55	27	12	4
TONEYKIRK	Castle-Kennedy - - - - -	46	22	10	4
	Stoneykirk - - - - -	50	24	7	2
	Sandhead - - - - -	50	22	14	3
	Meoul - - - - -	42	22	11	5
KIRKMAIDEN	Ardwell - - - - -	49	20	6	2
	Central - - - - -	62	20	8	4
	Southern - - - - -	50	26	11	4
PORTPATRICK	Northern - - - - -	48	16	8	3
	Portpatrick - - - - -	70	41	25	6
KIRKCOLM	Kirkcolm Public - - - - -	46	26	12	1
	Kirkcolm Village - - - - -	48	33	12	2
	Dhuloch - - - - -	35	11	1	
LESWALT	Leswalt - - - - -	42	24	10	3
	Larbrax - - - - -	40	12	5	1
NEW LUCE	New Luce - - - - -	45	25	17	8
	Glenwhilly - - - - -	22	10	9	1

Parish.	School.	Number of Children Examined.	Number Re-commended for Treatment.	Number Re-examined.	Number who had obtained Treatment.
KIRKOWAN -	Kirkcowan - - - -	78	34	10	2
	Darnow - - - -	18	11	3	
PENNINGHAME -	Penninghame - - - -	154	91	58	15
	Grange - - - -	43	18	5	4
	Loudon - - - -	30	14	10	2
	Challoch - - - -	30	20	17	3
	St. Ninian's - - - -	28	13	4	1
	Ewart High - - - -	47	23	13	13
	Douglas High - - - -	42	33	21	20
MOCHRUM -	Mochrum - - - -	51	17	6	3
	Portwilliam - - - -	79	50	24	8
	Elrig - - - -	31	13	11	9
	Culshabbin - - - -	20	8	7	1
WHITHORN -	Whithorn H.G. Public - -	151	77	57	17
	Isle of Whithorn - - -	51	7	4	1
GLASSERTON -	Glasserton - - - -	43	20	15	1
	Ravenstone - - - -	56	22	8	1
	Knock - - - -	34	12	9	1
SORBIE - -	Sorbie - - - -	56	21	9	2
	Garlieston - - - -	75	34	21	10
WIGTOWN -	Wigtown H.G. Public - -	148	72	45	14
	All Souls' - - - -	20	9	7	4
KIRKINNER -	Kirkinner - - - -	55	25	14	2
	Longcastle - - - -	56	26	12	5
	Malzie - - - -	44	22	11	10

GENERAL RESULTS OF MEDICAL INSPECTION.

The foregoing summary gives in detail the results of Medical Inspection during the months of May and June, 1912, and the year beginning 31st July, 1912, and ending 31st July, 1913.

During the past year 1391 girls, and 1356 boys, or a total of

2747 children, have been examined. Including the 650 children examined during the two months of the previous year, 3397 children, or 58 per cent. of the total number of school children in the County of Wigtown, have now been medically examined. At the fixed age periods much larger numbers of both boys and girls have been examined than at other ages, and the results obtained at certain ages, *e.g.* three years, 15 and 16 years of age, are based upon the examination of too small a number of children to prove of much value.

RECOMMENDATIONS FOR TREATMENT.

Treatment has been recommended in 45.1 per cent. of the total number of cases examined during the past year. In the case of the girls the percentage of physical defects was somewhat higher than in the case of the boys, in the former case 47.1 per cent. and in the latter case 42.9 per cent. of the children suffering from some form of physical disability. In a certain number of cases pathological conditions were found which had already received medical treatment; hence the total number of defects which were found to exist among the girls was 795 or 57.1 per cent., and among the boys 718 or 51.6 per cent., giving the total percentage of defects found in both sexes as 55.

The number of recommendations for treatment increases as a rule with advancing years—this is due in great part to the increasing necessity for the treatment of ocular and dental defects, the more frequent occurrence of enlarged tonsils and adenoids among younger children being thus more than counter-balanced.

Among both boys and girls the highest percentage of defects was found at the age of 12, when the teeth and vision defects reach a high point, and enlarged tonsils and adenoids are also found in a large percentage of children. At the age of five in both cases the lowest percentage of defects was found. The term “defect” is entirely confined for this purpose to conditions of pathological origin. Conditions such as uncleanness and pediculosis (verminous infection) are not included in this category.

CLOTHING AND FOOTGEAR.

Cleanliness.—In many cases the degree of cleanliness of the clothing left much to be desired, especially in the town schools among children living under the poorest conditions, and in the country schools among children whose mothers were regularly employed as out-workers. A considerable effort is made in many cases when notification of the official inspection is received, and new garments specially purchased for the occasion are frequently worn. The practice of regularly changing the garments does not appear to be always followed even by parents who are not by reason of poverty unable to provide a suitable change of clothing for the children.

Scissors were requisitioned on several occasions in order that children who were "sewn up" might be extricated from their clothing. This experience has been met with in many of the other counties, and judging by the firmness of the sewing, and the number of stitches employed, in most cases it was evident that the garments were intended to serve the wearers for a period of time which would justify the number of stitches inserted.

Sufficiency.—The number of children who were insufficiently clad was very small, only 9 girls and 15 boys being found to suffer from a deficiency of clothing. In a large percentage of cases, however, children were found to be very much over-clad, and this fault is one with regard to which it is much more difficult to convince parents of error. A deeply-rooted belief exists in the minds of many that the liability of children to "take cold" can only be combated by increasing the clothing. Accordingly many delicate children are the victims of this system—they enter upon the winter with an ample supply of clothing, and on every occasion when a "cold," however slight, is taken, another additional garment is added, until the child is so utterly over-burdened by its clothing that any exercise is sufficient to cause free perspiration, which is followed by a chilling of the surface of the body, and very frequently by another "cold." One child was found to have ten layers

of clothing under the dress, and eight or nine layers of clothing were not uncommon. In one case, in addition to eight layers, a double piece of blanket was found to be swathed firmly round the child, who presented the appearance of being encased in a plaster jacket. It is most important that the clothing of children should fit loosely, and allow of free and unhampered muscular movements. The symmetrical growth of the body depends largely on its muscular development, and to this end it is of the first importance that the muscles of the trunk and limbs should have free and unrestricted play. The proper movements of respiration are also much impeded by the restraints of tight clothing—poorly developed and flat chests being frequently induced.

In the great majority of cases flannelette was found to be worn next the skin. In all such cases emphasis was laid upon the advisability of substituting a woollen garment, as cotton—of which flannelette is a form—owing to its power of absorbing moisture, is apt to become cold and clammy and cause a dangerous chilling of the surface of the body. Pins in too many cases were found to take the place of buttons.

Footgear.—The footgear of the children was found on the whole to be satisfactory—strong, heavy boots being worn by the country children who have to walk some miles daily to attend school. A certain small proportion were, of course, found to be wearing boots which were in bad repair. During the summer and autumn months the majority of children attending country schools abandon boots and stockings, and appear to hail this opportunity of escaping from one of the bonds of civilisation. Stockings were not in every case immaculate, and an effort was made to arouse a sense of responsibility in the older children, and induce them to take an interest in the repair of their garments. In the case of country children who walk considerable distances to school, and during the wet weather suffered from the ill effects of sitting in school with wet boots and stockings, the parents were recommended to send a pair of dry stockings with the children.

MENTAL CONDITION.

It is difficult to form a very accurate estimate of the mental condition of a child during a rather brief examination. The excitement of the medical examination has the effect of making many children appear dull and stupid who normally are of average brightness and mental capacity. By close observation of the child during the entire examination, and, having first gained his confidence, by putting a series of carefully graduated questions, a fairly correct estimate can generally be formed as to the mental condition. A discussion on this subject with the teachers is often of great value, as they are in a position which enables them to form an unerring estimate of the mental powers of most of the children.

Mental Dullness.—Girls, 62 or 4·47 per cent. ; Boys, 122 or 8·97 per cent.

By mental dullness is not meant mere backwardness in school work, but a condition evidenced by mental torpor and sluggishness, lack of initiative and power of concentration, and inability to follow out any course of reasoning which requires much mental effort. Another feature of such cases is a lengthening of the reaction time, *i.e.* the time required for sensory impressions to convey their message to the brain and produce a motor response. Such children live according to habit and custom, and a monotonous daily routine furnishes for them the most satisfactory life, and one which makes the fewest demands on what they cannot supply.

Such cases might be said to lie on the borderland between "mental sufficiency" and "mental deficiency."

It will be noticed that the number of boys belonging to this class is practically double that of the girls, and this result agrees with that obtained in many other places. A certain number of cases of mental dullness are due to the presence of adenoids, deafness, and defective vision, and a marked improvement follows the treatment of these conditions.

Mental Defect.—Girls, 17 or 1·2 per cent. ; Boys, 21 or 1·5 per cent.

As a result of the work of the past year, it will be seen that 38 children were found to be mentally defective. During the previous two months' work in the Stranraer schools four girls and four boys were found to suffer from this defect, this forming a total of 46 mentally defective children in the county.

As children suffering from this defect are frequently presented as "special cases" it is probable that this number may be taken as a fairly accurate index of the total number of school children in the county who suffer from mental defect. These children are quite unfit to profit by the teaching given in ordinary schools, and they often exercise an unfavourable influence upon their fellow-scholars. It is of course impossible for teachers to pay special attention to such children and give them instruction suitable to their mental capacity. A special school for such children where carefully graded mental and manual training could be given is, of course, the only solution of the matter. In towns such schools are readily formed, and many such are already doing excellent work, but in rural areas the matter is one of much greater difficulty owing to the scattered nature of the school population.

DEFECTIVE SPEECH.

Girls, 30 or 2·1 per cent. ; Boys, 51 or 3·7 per cent.

Analysis of speech defects :				Girls.	Boys.
Defective articulation	-			17·6 per cent.	33·3 per cent.
Stammer	-	-	-	23·5	40·7
Lisp	-	-	-	47·	14·8
Burr	-	-	-	11·7	11·1

Nasal speech, such as is frequently found to be present in cases of enlarged tonsils and adenoids, or where any form of nasal obstruction exists, is not for the present purpose considered as a defect of speech. A considerable proportion of children who suffer from these defects will gradually through time become cured—the majority of those whose speech is imperfect being between the ages of 5 and 10. Boys were

found to suffer from defective speech more frequently than girls, stammering and defective articulation being found in greater proportion among the boys, while lisping was more frequent among the girls.

DEFECTIVE VISION.

Girls, 182 or 13 per cent. ; Boys, 122 or 8·9 per cent.

It is impossible to test the vision of children under the age of seven, except in the case of children who are exceptionally bright. Routine vision testing is only undertaken after the age of seven, and is carried out by placing the child at a distance of six metres (20 feet) from the card on which the test types are printed. If the vision is normal it is expressed as $\frac{6}{6}$, the child being able to read at a distance of six metres the type which ought to be read at that distance. Degrees of defective vision are expressed as $\frac{6}{9}$, $\frac{6}{12}$, $\frac{6}{18}$, etc., the numbers indicating that the child at a distance of six metres can only read the type which ought normally to be read at a distance of 9, 12, and 18 metres. Children who wear spectacles are tested both with and without them. In the case of junior pupils defects of vision below $\frac{6}{18}$ were not recommended for treatment, unless definite symptoms of eye strain were present, but among the senior pupils visual defects of $\frac{6}{12}$ were as a rule recommended for medical attention. In a certain small proportion of cases of slight defects of vision occurring in anæmic and poorly nourished children, the vision improves co-incidentally with the general health, and spectacles may be unnecessary. The great majority of visual defects can only be effectively and adequately treated by the prescribing of suitable glasses. It is of the utmost importance that school books should be printed in a large clear type, adapted to the requirements of children of different ages, and that the black-boards should have a dull surface, the glazing so frequently found having a dazzling effect upon the eyes of the children. The lighting of many schools unfortunately is not all that could be desired, imperfectly lit infant and junior class-rooms in particular exercising a very pernicious effect upon the vision

of many scholars. Books or sewing should normally be held twelve inches from the eyes, and children who habitually hold the book or sewing nearer are found to be suffering from errors of refraction, which they seek to correct by decreasing the distance between the eye and the object to be seen. The eyeball of a growing child is yielding and plastic, and in cases of visual defect the continual pressure made upon it by the muscles of accommodation frequently leads to alteration in shape and undue lengthening. The vision as a result becomes progressively worse in such cases, and a "vicious circle" is formed which leads to progressive myopia or short sight, one of the most serious forms of visual defect. It is of the utmost importance that all visual defects should receive attention in order that the eye strain may be removed and permanent injury to the eye avoided.

Many children suffering from marked visual defects which have not been detected, appear to be mental & dull and backward, but when appropriate treatment is given and the error of refraction corrected, they rapidly improve and make up lost ground.

Unfortunately it is the practice in many schools to give the sewing lesson in the second half of the afternoon. This arrangement is one which must be condemned, as the light—more particularly during the autumn and winter months—is far from good at that hour, and some strain on the eyes of the pupils is almost unavoidable. As far as possible the sewing lessons should be given during the morning hours, and in the class-room which is best lighted. It is satisfactory to record that in several schools this arrangement has now been made.

It is almost universally found that girls suffer from defective vision in a much higher degree than boys. This is attributable probably in great part to the eye strain caused by fine sewing with white materials, but marked improvements in this respect are now being made, coloured wools and threads being used, and no fine sewing being permitted in the junior classes. The symptoms of asthenopia or eye-strain most commonly shewn are a feeling of weight behind the eyes, headache, varying in intensity and situated behind the eyes and forehead, a burning

and itching sensation in the eyes, blurring of the objects looked at, and "dancing" of the letters when reading. In more severe cases giddiness and sickness may occur. These symptoms disappear on the application of suitable treatment and correction of the error of refraction.

Table shewing the percentage of children of different ages found to be suffering from defective vision :

Age.	Girls.	Boys.
7 years.	6.5 per cent.	2.7 per cent.
8 ,,	14 ,,	8.9 ,,
9 ,,	20.7 ,,	20 ,,
10 ,,	18.6 ,,	10.3 ,,
11 ,,	19.1 ,,	17.3 ,,
12 ,,	25.1 ,,	19.2 ,,
13 ,,	17.1 ,,	15 ,,
14 ,,	19.6 ,,	6.9 ,,

Both eyes were found to be defective in 50.7 per cent. of the total cases, the right eye in 25.3 per cent., and the left eye in 23.9 per cent.

It may be interesting to compare the results found in other places with those already given for the county of Wigtown :

	Girls.	Boys.
Edinburgh -	27.9 per cent.	25.2 per cent.
Dumfries -	10 ,,	8.7 ,,
Kirkcudbright -	19 ,,	15.4 ,,

EXTERNAL EYE DISEASES.

Girls, 137 or 5.7 per cent. ; Boys, 89 or 4.4 per cent.

Analysis of eye diseases and defects :

	Girls.	Boys.
Squint - - -	57 or 4. per cent.	28 or 2. per cent.
Conjunctivitis - -	26 or 1.9 ,,	20 or 1.4 ,,
Blepharitis - -	29 or 2. ,,	31 or 2.2 ,,
Keratitis - -	2 or .14 ,,	1 or .07 ,,
Corneal opacity - -	8 or .57 ,,	2 or .14 ,,
Corneal ulcer - -	1 or .07 ,,	
Hordeolum - -	6 or .42 ,,	3 or .21 ,,
Nystagmus - -	2 or .14 ,,	2 or .14 ,,
Ptosis - -	1 or .07 ,,	2 or .14 ,,
Iridectomy - -	1 or .07 ,,	
Inequality in size of eyes	3 or .21 ,,	
Exophthalmos - -	1 or .07 ,,	

Squint.—Children found to be suffering from squint were in the majority of cases recommended for treatment, as it is of importance that this condition should be treated as early as possible. In certain cases an error of refraction causes a squint, the child endeavouring to focus objects more clearly by altering the axis of the eye. Squints may be due to other causes—muscular weakness in states of anæmia and malnutrition, imitation, external eye disease, etc. Although the vision of the affected eye may be normal at first, it gradually deteriorates, and if remedial treatment is not applied, the eye may become functionless, and treatment after the lapse of years may only restore the normal appearance of an eye which may be gravely impaired in function or even totally blind. In mild cases the prescription of spectacles may be sufficient, but in more severe cases a slight operation is frequently necessary to remedy this defect.

Conjunctivitis.—Inflammation of the mucous membrane of the eye was found in some cases to have affected several members of one family. This is frequently found, as the disease is of an infectious nature. Several children were excluded from school on account of this condition.

Blepharitis.—Inflammation of the eye-lids was found in several cases to be a sequela of measles or whooping-cough. It is a somewhat chronic affection unless treated in the early stage, and was found chiefly in cases where strict cleanliness had not been observed.

Keratitis.—Three children were found to suffer from inflammation of the cornea, and were at once excluded from school. This affection is a serious one and may cause permanent damage to the vision.

Corneal Opacity or white patches situated on the clear portion of the eye, was found to have resulted in every case from former inflammatory eye disease. The vision in every case was considerably impaired.

Corneal Ulcer was found in only one case, and the pupil was at once excluded and urgently recommended to obtain medical advice.

Hordeolum or styé is an affection of minor importance and occurred chiefly among poorly-nourished children.

Nystagmus or involuntary oscillation of the eye-ball is an affection of nervous origin. Vision is impaired in nearly every case, owing to an inability to steady the eye when focussing an object. Treatment in such cases is of little avail.

Ptosis or drooping of the upper eyelid was found in two out of the three cases to have existed since birth.

Iridectomy or the operation of cutting the iris had been performed in one case.

Inequality in size of the Eyes.—In two cases of this affection errors of refraction were found to be associated with the condition.

Exophthalmos or undue prominence of the eyes was found in one case.

EARS.

The chief affections found to be present were classed under two headings: (1) *Otorrhoea* (discharge from ear), (2) Defective hearing, due to (*a*) accumulation of wax, (*b*) other causes.

Otorrhoea or otitis media.—Girls, 37 or 2·6 per cent. ; Boys, 27 or 1·9 per cent.

In the majority of these cases the hearing was affected, and the children were in an anæmic and unsatisfactory state of health. Great difficulty is experienced in inducing parents to regard this affection with the gravity which it merits. A widespread tradition exists that it is unwise to arrest the discharge by means of treatment, the common belief being that in all such cases the brain at once becomes affected. The condition being one of frequent occurrence in children often as a sequela of measles, scarlet fever, or other infectious disease, parents are familiar with it, and are not alarmed when it occurs in their own families. Permanent impairment of hearing frequently results from neglected cases of otitis media—or inflammation of the middle ear—and in addition to the harmful effect on the general health of the child, this disease

may be attended by very serious complications—brain abscess, etc. All children suffering from this affection who were not already receiving medical treatment were recommended to do so, but unfortunately in only 21 per cent. of such cases was treatment obtained.

Deafness.—Acuity of hearing was tested by means of a watch, the tick of which was normally audible at a distance of six feet, and defects of hearing were judged in terms of this.

(a) *Accumulation of wax or cerumen.*—Girls, 9 or ·6 per cent.; Boys, 4 or ·29 per cent.

This condition, though frequently present in slight degree, was found in only 13 cases to affect the hearing.

(b) *Other causes.*—Girls, 37 or 2·6 per cent.; Boys, 49 or 3·6 per cent.

In the majority of cases this was the result of former otitis media which had continued for several years, and finally cured itself at the expense of the child's hearing. Children suffering from otorrhoea at the time of examination were also found in more than 50 per cent. of cases to present defects of hearing, and in four cases impairment of hearing was due to a condition of dry catarrh of the tympanic membrane (or drum) of the ear. Enlarged tonsils and adenoids were responsible for defective hearing in several cases. It is of the utmost importance for the sake of the child that every defect of hearing should receive prompt medical attention—many cases of apparent mental dullness and backwardness being due entirely to defective hearing.

TEETH.

	Girls.	Boys.
Sound - - -	139 or 10· per cent.	146 or 11· per cent.
1-4 teeth carious -	732 or 52·6 ,,	713 or 52· ,,
Over 4 carious -	520 or 37·4 ,,	497 or 37· ,,
Oral sepsis - -	4·8 ,,	4· ,,

As regards the teeth of the children examined a most unsatisfactory condition was found to exist. It is a matter

of the greatest difficulty to impress upon parents that the teeth of the children require constant and careful attention. The evils resulting from neglect in this matter may not always be so obvious as to force themselves upon the notice of busy and in some cases ignorant and careless parents. Although not always immediately recognisable by the uninitiated, the evils arising from carious teeth are very important and far-reaching. Caries or decay beginning in one tooth frequently affects the neighbouring tooth; a septic condition of the gum may then develop which frequently causes inflammation and suppuration of the lining membrane of the jaw (gum boil). The lymphatic glands of the neck into which the lymphatics of the mouth drain become enlarged as a result of the septic condition of the mouth, and in practically every case where carious teeth are found there is some glandular enlargement. This enlargement is in many cases the starting-point of tubercular infection. The general health suffers in marked degree owing both to the inability to masticate the food and also to the absorption of septic material from the mouth. It is also stated by authorities on this subject that the proper development and growth of the jaws, facial bones, and nasal passages are retarded and arrested owing to the decreased biting power. The septic condition of the mouth sets up an inflammatory condition of the nasal mucous membrane, which in its turn causes mouth breathing and possibly adenoids. The necessity of paying careful attention to the teeth of children is therefore obvious. A common belief exists that it is unnecessary to pay attention to the milk teeth, but it is important that these should not be neglected, as carious milk teeth frequently infect the permanent teeth which lie in the jaw beneath them.

A certain divergence of opinion exists as to the cause and factors of dental caries, but all authorities agree in attaching great importance to the particles of food stuff which lodge between the teeth, and which require to be frequently and regularly removed if the teeth are to be kept sound. The carbohydrates (starches and sugars) are the class of food

stuffs which tend to decompose most readily in the mouth and set up caries. The habit of regular and careful brushing of the teeth ought to be inculcated in every child, as even young children can be taught to keep their teeth clean, and take a pride in doing so. In many houses the toothbrush unfortunately finds no place, and in others is regarded chiefly as an ornament. Poverty in some cases makes it difficult for parents to supply their children with toothbrushes. In some schools toothbrush clubs have been started and proved most successful. A large number of toothbrushes are bought at wholesale prices ($2\frac{1}{4}$ d. each) and sold to the children at $2\frac{1}{2}$ d. each, the money being paid in small weekly instalments. Precipitated chalk is also sold at a low price, and with any profit that results toothbrushes are given free to very poor children. Great interest is taken in these clubs by the children, and every child saves all available farthings until the coveted brush can be procured. The first of these clubs, on which many others have been modelled, was formed in London. In several schools also an excellent innovation has recently been made in the form of toothbrush drill. Each child has an enamelled mug and toothbrush, which are kept in school, and every day a few minutes are devoted to cleansing the teeth, the children being taken in batches and supervised by a teacher.

It may be interesting to compare the results obtained in other places in the matter of dental caries :

Glasgow	- 16.7	per cent. of the children possessed sound teeth.	
Edinburgh	- 16.2	„	„
Paisley	- 8.37	„	„
Dumfries	- 11.5	„	„
Kirkcudbright	28.4	„	„
Greenock	- 24.5	„	„
Wigtown	- 10.3	„	„

It is found, as a rule, that in towns where dental treatment can be procured more easily than in rural districts, the percentage of children with sound teeth is higher. Unfortunately it is clear from the foregoing figures that much requires to be done in the way of reformation before the

condition of the teeth can be regarded as satisfactory. Cards containing hints regarding the care of the teeth are distributed freely among the parents at the examinations. All children requiring dental treatment have been recommended to obtain this, except in a few cases where conservative treatment only was required and the parents obviously unable through poverty to carry out the advice given.

Although a large percentage of parents have failed to obtain the treatment required, in a certain proportion of cases the dentist has been visited, with most beneficial results, and it is to be hoped that as time passes an increasing number of children will be found with sound teeth.

Oral Sepsis.—This condition, which is one of suppuration of the gums, was found in all cases to be associated with carious teeth—frequently the temporary teeth. Extraction of the teeth was required in all cases.

Percentage of dental caries at different ages :

Age.	Girls.	Boys.
4 years.	78· per cent.	75·6 per cent.
5 „	89·3 „	82·7 „
6 „	87·6 „	94·5 „
7 „	94·5 „	94·5 „
8 „	93·2 „	93·2 „
9 „	94·8 „	95·7 „
10 „	88·2 „	90· „
11 „	93·3 „	93·3 „
12 „	90· „	90·3 „
13 „	87·1 „	84·9 „
14 „	86·5 „	84·1 „
15 „	90·7 „	84·6 „
16 „	90·2 „	66· „

TONSILS.

Girls, 250 or 18·6 per cent. ; Boys, 282 or 20·7 per cent.

Some degree of tonsillar enlargement is very frequently found among children. Various factors appear to co-operate in the causation of this condition, although it is often difficult

to determine the relative importance of these in individual cases. Among the predisposing causes may be mentioned rheumatism, carious teeth, mouth breathing, anæmia, and malnutrition, and the breathing of impure and dust-laden air. Enlargement of the tonsils is an affection which occurs most frequently in young children, the highest percentage of cases were found to occur at the age of eight in the case of girls, and at the age of 12 in the case of boys. Various degrees of enlargement are met with, and these are classified under the headings of slight, moderate, and marked enlargement. As in the case of middle ear disease, much difficulty has been experienced in inducing parents to regard this condition as one for which treatment is required. The common belief held is that children will "grow out of" this, and that any treatment is therefore unnecessary. Although it is true that in some cases the tonsils tend to decrease in size as children become older, parents are apt to ignore at what expense this "growing out of them" is affected.

The chief evils which result from enlarged tonsils are the following: attacks of acute tonsillitis, enlarged lymphatic glands in the neck, the habit of mouth breathing owing to the obstruction to the entry of air, deafness, a marked tendency to catarrhal conditions of the bronchial tubes resulting in attacks of bronchitis and possibly pneumonia, and a liability to contract such diseases as diphtheria and scarlet fever. As an illustration of the latter, mention may be made of a child attending a school in the county who was found on examination to suffer from tonsillar enlargement of an aggravated kind. Treatment was urgently recommended, and mention made of the possible complications and danger to the child if infectious disease should be contracted. On returning to the school three months later, the head teacher reported that no attention had been paid by the parents to the recommendation, and that this pupil had, during the previous week contracted diphtheria, which had assumed a virulent form, and from which the child had died. Adenoids are found also to be frequently present in cases where tonsillar enlargement exists.

The three grades of tonsillar enlargement were found to be present in the following proportions :

	Girls.	Boys.
Slight enlargement	57 % of total cases.	58 % of total cases.
Moderate - - 37 „	„	28 „
Marked - - 6 „	„	14 „

Percentage of children of different ages suffering from tonsillar enlargement :

Age.	Girls.	Boys.
5 years.	14.9 per cent.	15.2 per cent.
6 „	17.5 „	11.7 „
7 „	19.7 „	19.3 „
8 „	31.5 „	24.6 „
9 „	19.8 „	26.3 „
10 „	19.6 „	21.8 „
11 „	18 „	29.3 „
12 „	17.5 „	33.7 „
13 „	10.1 „	23.2 „
14 „	19.6 „	13.8 „

In some cases of slight tonsillar enlargement the children were noted as “observation cases,” *i.e.* children who are called up for more frequent examinations than the other pupils, and immediate treatment was not recommended, but in every case of moderate or marked enlargement medical treatment was recommended. It is unfortunate that in many country schools children who come from a considerable distance, and arrive at school in a very wet condition—especially as regards footgear—require to sit for several hours in this condition, which acts most prejudicially in the case of many children with any tendency to tonsillar enlargement.

Fifteen girls and fifteen boys were found to be suffering from varying degrees of tonsillitis.

ADENOIDS.

	Girls.	Boys.
Present	23 or 1.7 % of total girls.	54 or 4 % of total boys.
Probable	114 or 8.2 „	126 or 9.3 „

Adenoids, or an overgrowth of the lymphatic tissue situated between the nose and throat, is found in a great number of

cases to accompany tonsillar enlargement. The predisposing causes are so far similar, habitual mouth breathing occupying a prominent place. Children suffering from adenoids present a distinctive facial appearance, and are mouth breathers. Mental torpor and dullness, nasal speech, deafness, constant nasal discharge, and occasionally otorrhoea, disturbed sleep and night terrors, are other symptoms which frequently occur in addition to those already mentioned as occurring in cases of tonsillar enlargement. In children who also suffer from rickets, a condition of chest deformity frequently is seen—pigeon chest—which is caused by additional respiratory efforts being made in order to overcome the obstruction to normal breathing. Slight cases of adenoids may be cured by attention to the general health, and the regular practice of breathing exercises, but in most cases operative treatment is required, and is often followed by an almost incredible improvement in the physical and mental condition of the child.

Digital examination of the back of the throat was not practised, as this procedure is apt to terrify young and nervous children. In the absence of digital examination it is not always possible to ascertain definitely whether or not a child is suffering from a slight degree of adenoid enlargement. The cases examined have accordingly been placed in two classes. In the first the presence of adenoids was definitely diagnosed from the symptoms, and in the second case the probable presence of adenoids was diagnosed. In all 317 children were found to suffer from definite or probable adenoid enlargement.

A point of interest which was noted at the examinations was the frequent association of adenoids with a highly arched palate.

NOSE.

Rhinitis.—Girls, 2·5 per cent. ; Boys, 3·6 per cent.

Rhinitis, or inflammation of the nose, was found to accompany enlarged tonsils and adenoids, and to be not infrequently induced by neglect of the use of pocket handkerchiefs. Nasal secretion which is not removed is apt to cause irritation and inflammation of the mucous membrane of the nose. In too

many cases parents neglect to provide children with handkerchiefs, or pieces of clean rag, which are equally useful where handkerchiefs cannot be provided. The reason assigned is chiefly that children invariably lose their handkerchiefs, but this can be obviated by fastening an end of the handkerchief to the child's dress, either by means of a safety pin or sewing. A handkerchief parade and handkerchief drill given occasionally by their teachers has a most beneficial result.

Nasal Obstruction.—This condition was found to exist in several cases of enlarged tonsils and adenoids—nasal speech and mouth breathing being prominent symptoms. In the case of one pupil a nasal obstruction of doubtful origin was present.

Enlarged Turbinate Bones.—Girls, 2 or 14 per cent. ; Boys, 2 or 14 per cent.

This condition frequently necessitates operation owing to blocking of the nasal passages caused by the projection of the enlarged bones.

Nasal Polypus.—One boy was found to suffer from this condition.

MOUTH BREATHING.

This condition is found to be present in a very large percentage of school children. In some cases it is due to the presence of enlarged tonsils and adenoids, in other cases to the neglect of the pocket handkerchief, and in a certain number of cases it is merely a bad habit. It is important that all children should be taught to breathe correctly, keeping the mouth closed and drawing in the air through the nasal passages. In this way the air is warmed and filtered before reaching the respiratory passages. Children who are mouth breathers are much more likely to develop enlarged tonsils, and by lack of use the nasal passages contract and adenoid growths are liable to form. Proper development of the chest is retarded, and in predisposed subjects tubercular disease frequently finds a suitable soil. Great benefit would result if a few minutes daily could be allotted in the school curriculum to the teaching and practising of breathing exercises, the windows of the class-room being meanwhile thrown open.

ENLARGED GLANDS.

Girls, 902 or 64 per cent. ; Boys, 922 or 67·9 per cent.

Degree of glandular enlargement.

Girls.			Boys.		
Slight	- 78 %	of total cases of enlargement.	65·	%	of total cases of enlargement.
Moderate	21 „	„ „	33·5 „	„	„
Marked	- 1 „	„ „	1·5 „	„	„

Some degree of glandular enlargement due to septic absorption is of very frequent occurrence in school children. The glands in the neck are most frequently affected, the anterior cervical and submaxillary glands becoming enlarged in affections of the teeth and throat or mouth, and the posterior cervical glands in affections of the scalp. The enlargement is painless as a rule, unless in certain cases of acute inflammation. The chief danger of glandular enlargement in children lies in possible supervening tubercular infection. It is probable that this has occurred in the majority of cases of marked glandular enlargement. Comparison with other counties shews the percentage of glandular enlargement found in the county to be a fairly average one :

Slight enlargement.				Marked enlargement.			
Girls.		Boys.		Girls.		Boys.	
Midlothian	- 50·	per cent.	51·9 per cent.	3·9	per cent.	4·1	per cent.
Peeblesshire	55·1	„	55·2 „	2·7	„	8·8	„

Suppuration of the anterior cervical glands was found in one boy and one girl. Scars due to glandular abscesses were seen in 16 girls and 27 boys.

SKIN.

		Girls.	Boys.
Cleanliness—{	Uncleanliness of head	109 or 7·8 %	41 or 3· %
	„ body	101 or 7·2 „	122 or 8·9 „

The standard of cleanliness was found to vary considerably in different districts, and in different schools. Upon the whole it could not be regarded as satisfactory. In districts where

the mothers were employed daily in field work, mill work, etc., the standard was found to be markedly lower than in other places, and in certain of the town schools a very low standard of cleanliness was found among many of the pupils. Unhygienic home conditions are an important factor in this case—small houses with an insufficient number of rooms, inadequate lighting and ventilation, and a supply of water situated often at a considerable distance from the house, are conditions which when combined with poverty do not tend to encourage cleanliness in the homes. Children growing up in such surroundings are more or less accustomed to conditions of uncleanness. In many places an attempt is being made to substitute school for home training in this respect, and where the object lesson of the home is bad, to correct this as far as possible by instituting methods of personal cleansing at the schools. Shower baths have been introduced into several schools, and arrangements made for the cleansing and disinfection of clothes, and it is to be hoped that this excellent example will soon be more generally followed. The weekly bath is a regular institution in many homes, but with many children a bath was found to be a rare occurrence—several children stating that they had received a bath on the evening before the medical examination, and could not remember ever having been bathed before! Unfortunately at present many of the schools are not supplied with basins and water for washing purposes, but this defect is generally being remedied.

Diseases of the Skin.—(a) **Pediculosis or verminous infection of the skin.**

		Girls.	Boys.
Head	- -	550 or 39 per cent.	71 or 5·2 per cent.
Body	- -	206 or 14 ..	171 or 12·6 ..

This affection is one which is of more frequent occurrence than any other among school children. Its frequency unfortunately causes it to be regarded by parents with little concern, many of them holding absurd and humorous views regarding the "spontaneous generation" of pediculi, and the necessity for all healthy children to be thus affected.

In many cases of pediculosis of the body the condition of the house is at fault and is responsible for the continued infection of the inmates. It will be seen as regards the head condition that the percentage of girls affected was very much higher than that of the boys. This is, of course, natural, and has been everywhere found to occur. The chief cause of the spread of this infection among the girls in schools is the habit of wearing the hair loose. It therefore unavoidably comes into contact with the hair of other children and so spreads the infection. One uncleanly child in this way can infect all the other scholars in her class. A strong effort has been made to induce all parents to send girls to school with the hair plaited and tied back, and already a great improvement in this respect has been noted. The general appearance is most noticeably improved, and during both their work and play children are freed from the annoyance caused by the hair falling around the face. In the case of young children parents were urged to keep the hair short. The most marked improvement as regards the spread of pediculosis has been seen to follow the custom of plaiting the hair, and parents have frequently stated that they have found it of the greatest benefit in the prevention of school infection. The numbers given above include all children who on examination shewed evidence of infection—whether pediculi or nits only.

The attention of the parents was drawn to all such cases, and directions given or sent as to the best means to employ in treating the condition. Many cases are only those of chance infection, and such are readily and quickly cured.

105 girls and 13 boys were excluded from school attendance for one week owing to pediculosis. If the printed directions are carried out this period should suffice to cure the condition. In certain cases a second period of exclusion had to be advised. The majority of parents readily carry out the instructions given, and are anxious to remedy the state of matters, but in a certain proportion of cases one meets with indifference and carelessness. It is satisfactory to be able to report that a marked improvement has been noted as a result of the year's work.

Ringworm--	Girls.	Boys.
Head - -	6 or .42 per cent.	8 or .58 per cent.
Body - -	—	7 or .51 „

All the pupils who were found to be suffering from ringworm of the head were excluded. The affection is frequently a tedious one, and a cure is not effected for some considerable time ; and although exclusion of children for a period extending over at the best several weeks is a regrettable matter, in the interests of the other pupils it is demanded. Ringworm affecting the body is a much less serious affection, which is readily cured, and does not necessitate exclusion. The fact that all the cases were found to occur among boys is probably attributable to the fact that the disease is frequently contracted from cattle.

Scabies or Itch.—Girls, 12 or .86 per cent. ; Boys, 25 or 1.82 per cent.

This disease is caused by a parasitic insect which burrows in the superficial layers of the skin and causes various inflammatory lesions. It is of an exceedingly contagious nature, several members of a family being found frequently to be affected, and in all cases exclusion from school is necessary. If on examination one member of a family was found to be suffering from this disease, any other members who also attended school were called up and subjected to a cursory examination in order to ascertain whether or not they also suffered from the infection. In several cases three or more members of one family were excluded owing to scabies. Medical treatment was advised in every case, and the affection, if promptly treated, does not seriously affect a child's school attendance. In a few schools where several cases of scabies were found, disinfection of the school furniture and building, and burning or disinfection as far as possible of school exercise books, etc., was advised as a precautionary measure. The disease, if untreated, frequently assumes a chronic form, and several pupils were found who had for several months suffered from this affection. It is to be hoped that in future the percentage of children suffering from this infection may show a

considerable decrease, following upon the exclusion and treatment of those cases which were constant sources of infection to their comrades.

Several of the cases were presented as "special cases" by the head teacher, but in the majority of cases there was little visible indication of the disease until the child was partially undressed.

Impetigo.—Girls, 5 or 35 per cent. ; Boys, 10 or 73 per cent.

This skin affection consists in the appearance chiefly on the face, head, and hands of isolated spots, at first resembling small blisters, but rapidly becoming pustular in character. A child, by touching one such spot, frequently spreads the infection to other parts of the body, and as the disease is very contagious children readily infect each other. Exclusion is recommended in such cases. Other skin affections found to occur were the following :—

	Girls.	Boys.
Erythema - - - - -	1	2
Herpes Zoster ("Shingles") - - -	—	1
Alopecia (bald patches) - - -	2	2
Scarring due to severe burning -	3	—
Eczema - - - - -	8	12
Seborrhoeic eczema - - - - -	8	2
Psoriasis - - - - -	2	6
Acne Vulgaris - - - - -	2	1
Ichthyosis ("fish skin") - - -	3	7
Chilblains - - - - -	1	1
Leucoderma - - - - -	—	1

NUTRITION.

Malnutrition.—Girls, 164 or 11·7 per cent. ; Boys, 162 or 11·9 per cent.

Table shewing percentage of children of different ages suffering from malnutrition :

Age.	Girls.	Boys.	Age.	Girls.	Boys.
5	5·9 per cent.	9·1 per cent.	10	12·6 per cent.	17·2 per cent.
6	12·2	5·4	11	5·3	12·
7	20·13	10·1	12	12·	10·8
8	18·4	21·3	13	6·9	12·3
9	20·7	8·4	14	9·8	9·7

In considering the question of the general nutrition of school children, the methods and results of individual inspectors are found to vary very greatly, and the personal equation counts for more in this matter than in almost any other. The results obtained in Wigtownshire have been arrived at by considering the nutrition of each child examined from the standpoint of height, weight, and general physique and appearance. A child suffering from malnutrition will be found to present in some degree most of the following characteristics :— weight distinctly below the average when considered in relation to the height, pallor of the skin and mucous membranes, dryness of the hair, flabbiness of the tissues, and mental sluggishness. In many cases one or more of these symptoms may exist without furnishing sufficient evidence of malnutrition, *e.g.* pallor of the skin and undue flabbiness of the tissues may be found in well-nourished children who suffer from anæmia. In comparing the results found in different schools a great variation was found to occur, due apparently in great part to the class of work and average income of each district. Marked differences were found to exist at different age periods. Among girls the largest proportion of poorly nourished children occurred at the age of nine years, and among boys at the age of eight years. Various factors were found to be instrumental in bringing about a condition of poor nutrition :

(1) *Insufficient Food*.—This was found to be the direct result of poverty, many parents finding it impossible to supply adequately the wants of a large family of growing children. The article of diet which appeared to be most frequently lacking, or supplied in insufficient quantity, was milk. In a great number of cases one half pint of skim milk was the daily supply of a family composed of the parents and several children, and even in cases where a larger quantity was obtained it was frequently skim milk. In a large percentage of cases it was stated by the parents that children ate little or no breakfast, many setting out to walk several miles to school without having tasted food. This was apparently due to a feeling of excitement and desire to go off to school without delay, but naturally it exerts a very bad effect on the health

of the children, especially during the winter months. Such children frequently become hungry during the course of the morning, and at the 11 o'clock interval eat the "piece" which had been intended to form the mid-day meal.

During the winter months a marked deterioration in the nutrition of many of the children was noticed, in many cases the direct result of the parents being unemployed and unable to provide sufficient food.

(2) *Unsuitable Food*.—This factor was found to be of even greater importance than the former, and to be present in a much greater number of cases. As has been found in most of the other counties, tea and bread were found to occupy the chief place in the dietary of very many children. A somewhat careful enquiry into the question of dietary was made in all cases, and with the exception of a certain proportion of well-cared-for children, the diet was found to be lacking in the special classes of food stuffs suitable to the growth and development of the tissues. Porridge was very rarely given at breakfast time, the breakfast consisting of tea and bread or "fried scone," in only a few cases bacon or eggs being also supplied. In the case of country children lunch is carried to school, and consists as a rule of a slice of bread and jam. In 17 schools in the county soup was supplied during the winter months at a nominal cost— $\frac{1}{2}$ d. daily—children receiving at mid-day one or more small bowlfuls of hot nourishing soup. The value of this to country children is very great, and if bread is taken with the soup a most satisfactory meal is obtained.

In three schools hot cocoa is kindly made by the teachers and given to the children instead of soup, as in small country schools it is not always possible to organise a soup kitchen. Children attending the town and village schools as a rule return home for dinner, which meal consists in the majority of cases of potatoes—often in the form of soup—and bread, tea often being also given. On returning from school the country children in most cases are given "stovies," or thick potato soup, followed an hour or two later by tea and bread. In some homes porridge is made in the evening and given to the children either on their return from school or later in the

evening. Town children are given tea and bread and jam on their return from school, and frequently porridge is made for an evening meal. The most outstanding fact revealed by an inquiry into the dietary of a large number of children in the county was the fact that it was composed almost exclusively of carbohydrates—sugars and starches—the proteids (nitrogenous foods such as meat, fish, etc.) and fats being in many cases very deficient or practically absent.

Soup, which if made of peas or beans is very nourishing, and supplies the nitrogenous elements required for the healthy nourishment of the tissues, was almost invariably made of potatoes, which are composed almost exclusively of starch. Meat was very rarely given, and fish only in certain places where fishing was the chief occupation of the parents. Butter was much more rarely used than jam. In certain cases where the parents were out-workers children were found to live almost entirely upon tea and bread and jam, this being taken three or four times daily. The popularity of tea rests partially upon the fact that it is very easily and readily made, but an additional reason for its popularity was suggested by the remarks of one or two parents. These stated that they could not feed their children except upon tea and bread, as otherwise they were "too hungry." The continual drinking of strong tea—rarely freshly made—undoubtedly exercises a most injurious effect upon the organs of digestion, and takes away the appetite. Cocoa, although used in some homes, occupied an unimportant place in the dietary as a whole. Porridge, if taken with milk, is the ideal food for children, containing in suitable proportions all the elements required for nourishment and growth: unfortunately, however, it is not used in many homes, owing apparently to the time and trouble required in its preparation. A much more abundant supply of fresh unskimmed milk, and a more universal appreciation of the food value of porridge, would go far to decrease the number of children suffering from malnutrition.

(3) *Insufficient Sleep*.—In too many cases it was ascertained that children suffering from malnutrition were obviously not having sufficient sleep. It was frequently found that such

children went to bed at 10 or 11 o'clock. In summer time the desire of children to play outside was blamed as a cause for this, but the parents in many cases appeared to be ignorant of the necessity for a child to have regular and sufficient hours of sleep during the period of rapid growth of mind and body.

(4) *Employment of Children*.—A certain proportion of cases of malnutrition were distinctly referable to the undue strain put upon children by their employment out of school hours. Many children between the ages of 11 and 14 were found to be employed in some kind of farm work, some milking four or five cows morning and evening, carrying milk, or otherwise assisting their parents. In the towns and villages many of the children were employed as shop messengers, and in two cases boys between the ages of 13 and 14 were found to be working between the hours of four and ten as apprentices in shops. Such employment of children must be strongly condemned on the score of health, as the daily demands made by school work, and the confinement during school hours, are more than sufficient for children, and no additional work can be added without making an undue demand upon the energy and general nutrition of the child.

(5) *Unhygienic Home Conditions*.—Lack of fresh air and overcrowding were found in many cases to have acted most prejudicially on the nutrition of the children. It is still difficult to induce people to realise the necessity for a constant supply of fresh air by day and night, and open windows are regarded by many people with horror. In certain houses it was stated that the windows would not open. Conditions of anæmia and physical unfitness of any kind require in their treatment a free supply of fresh air by day and night, and in cases where there is a predisposition to tubercular disease it is of the utmost importance to secure that the children be brought up in hygienic surroundings.

(6) *Diseases or Defects*.—Carious teeth, enlarged tonsils and adenoids, skin affections, and other pathological conditions were found to be in many cases the chief factors in causing conditions of malnutrition and anæmia.

HEIGHTS AND WEIGHTS.

The following tables shew the average heights and weights of children of different ages in the county. Owing to the smallness in the number of scholars attending many of the county schools, it was not possible to consider each school separately, and the averages were estimated on the total numbers of children in the county who fell into each age group. Along with the county average is given in each case the Anthropometrie Committee's standard average. As this standard was based upon results obtained by weighing and measuring children with boots, and the county results obtained by weighing and measuring children—according to the recommendations of the Board of Education—without boots, a comparison of the two averages is of less value, as the weight of ordinary boots varies considerably, having been found to be as much as 4 lbs. in the case of country children wearing specially strong footgear.

TABLE OF HEIGHTS.

GIRLS.

Age.	Number Examined.	Average Height.		Anthropometric Committee's Standard Average.	
5	206	3 feet	5 $\frac{1}{4}$ inches	3 feet	4·8 inches.
6	140	3 ..	6 $\frac{3}{4}$..	3 ..	6·6 ..
7	180	3 ..	9 ..	3 ..	8·5 ..
8	115	3 ..	11 $\frac{1}{2}$..	3 ..	10·6 ..
9	111	4 ..	1 $\frac{1}{4}$..	4 ..	0·7 ..
10	305	4 ..	3 $\frac{1}{4}$..	4 ..	3·1 ..
11	115	4 ..	3 $\frac{1}{4}$..	4 ..	5·1 ..
12	110	4 ..	7 $\frac{1}{2}$..	4 ..	7·7 ..
13	225	4 ..	10 ..	4 ..	9·8 ..
14	62	4 ..	11 $\frac{1}{4}$..	4 ..	11·8 ..

Boys.

5	281	3 feet	5 $\frac{1}{2}$ inches	3 feet	5· inches.
6	186	3 ..	7 $\frac{1}{2}$..	3 ..	8· ..
7	179	3 ..	9 $\frac{1}{2}$..	3 ..	10· ..
8	122	3 ..	11 $\frac{1}{2}$..	3 ..	11·1 ..
9	100	4 ..	6 $\frac{1}{2}$..	4 ..	1·7 ..
10	303	4 ..	3 $\frac{1}{4}$..	4 ..	3·8 ..
11	87	4 ..	4 $\frac{1}{2}$..	4 ..	5·5 ..
12	99	4 ..	7 ..	4 ..	7· ..
13	169	4 ..	8 $\frac{3}{4}$..	4 ..	8·9 ..
14	86	4 ..	11 $\frac{1}{4}$..	4 ..	11·3 ..

TABLE OF WEIGHTS.

GIRLS.

Age.	Number Examined.	Average Weight.		Anthropometric Committee's Standard Average.	
5	206	3 stones	$4\frac{1}{2}$ lbs.	2 stones	11·6 lbs.
6	140	3 "	$\frac{3}{4}$ "	3 "	4 "
7	180	3 "	$4\frac{1}{2}$ "	3 "	4·7 "
8	115	3 "	$10\frac{1}{4}$ "	3 "	10·2 "
9	111	4 "	$2\frac{1}{4}$ "	3 "	13·5 "
10	305	4 "	5 "	4 "	6 "
11	115	4 "	13 "	4 "	12·1 "
12	110	5 "	$5\frac{1}{4}$ "	5 "	6·4 "
13	225	6 "	$3\frac{1}{4}$ "	6 "	3 "
14	62	6 "	$7\frac{3}{4}$ "	6 "	12·7 "

BOYS.

5	281	2 stones	$12\frac{3}{4}$ lbs.	2 stones	11·9 lbs.
6	186	3 "	$2\frac{1}{4}$ "	3 "	2·4 "
7	179	3 "	$6\frac{3}{4}$ "	3 "	7·7 "
8	122	3 "	$10\frac{3}{4}$ "	3 "	12·9 "
9	100	4 "	9 "	4 "	4·4 "
10	303	4 "	8 "	4 "	11·5 "
11	87	4 "	$12\frac{1}{4}$ "	5 "	2 "
12	99	5 "	$5\frac{1}{4}$ "	5 "	6·7 "
13	169	5 "	$13\frac{1}{4}$ "	5 "	12·6 "
14	86	6 "	$6\frac{1}{4}$ "	6 "	8 "

Comparison between County average and Standard average.

HEIGHT.

Below standard.		Above standard.	
Girls.	Boys.	Girls.	Boys.
11 years	6 years	5 years	5 years
12 "	7 "	6 "	8 "
14 "	10 "	7 "	9 "
	11 "	8 "	
	13 "	9 "	
	14 "	10 "	
		13 "	

WEIGHT.

Below standard.		Above standard.	
Girls.	Boys.	Girls.	Boys.
7 years	6 years	5 years	5 years
10 "	7 "	6 "	9 "
12 "	8 "	9 "	13 "
14 "	10 "	11 "	
	11 "	13 "	
	12 "		
	14 "		

It will be evident from this comparison that the average nutrition of the girls of school age, considered from the standpoint of height and weight only, was considerably superior to that of the boys, three age groups in the case of the girls and six in the case of the boys shewing an average height below the standard, and four age groups of girls and seven of boys shewing an average weight below the standard. Seven age groups of boys and three of girls shew an average height above the standard, and five age groups of girls and three of boys shew an average weight above the standard. This result coincides with that of several other medical inspectors, girls being found to maintain the standard of weight and height during school life better than do boys. A point of considerable interest in the foregoing tables is the high average weight found in girls of five years of age, the average much exceeding the standard average and being also greater than the county average for the six year age group of girls, and exactly similar to the county average for the seven year age group. This result was entirely in accordance with the impressions formed during the year's work, and may probably be explained by the fact that the children of five who were examined were all entrants who had not for more than a few weeks at most been subjected to the confinement and additional strain of school life, which makes great demands upon the nerve energy and general physique of the child. It is probable that this strain may be felt with additional severity at the beginning of school life, and it will be a point of considerable interest to note whether this high average weight continues to be found among girls of five years of age, while a lower average weight is found in the succeeding age group. The fact that only 5.9 per cent. of girls of five years of age were found to suffer from malnutrition, while 12.2 per cent. of those at six years of age and 20.3 of those at seven years shewed evidence of this, is a further indication that the suggested explanation is probably the true one. Similarly among boys of nine years of age it was found that the county average height and weight was very high, exceeding both the standard for that age and the county average for the two succeeding age groups, both of

which fall below the standard average. The explanation in this case is probably to be found in the fact that at the age of 10 and 11 years a very high percentage of defects were found among the children, which exerted an unfavourable influence upon their growth and general nutrition. At the age of 10 also school work becomes increasingly arduous, home lessons often being added, or home duties exacted of the children during the hours which ought to be devoted entirely to freedom and recreation.

VACCINATION.

Girls.			Boys.		
1 mark	49	% of those vaccinated	53	% of those vaccinated	
2 marks	49·6	„ „	44	„ „	
3	0·6	„ „	1	„ „	
4	0·8	„ „	2	„ „	

In only ten cases of those examined had vaccination not been performed, four girls and six boys being found to be unvaccinated. In four cases this was due to the children having been in poor health in infancy, and vaccination having been postponed indefinitely. In six cases it was due to "conscientious objection" on the part of the parents.

HEART AFFECTIONS.

(1) **Valvular Disease.**—Girls, 15 or 1·07 per cent. ; Boys, 23 or 1·7 per cent.

Valvular affections in children were found in the great majority of cases to be of rheumatic origin, or to have occurred in connection with certain infectious diseases, *e.g.* scarlet fever. It was difficult to determine the causal factor in many of the cases—frequently no rheumatic symptoms may be noticed by the parents, but a history of frequent sore throats or "growing pains" is often elicited. Such symptoms occurring in children are strongly suggestive of rheumatism, and a complaint of "growing pains" in children should not be lightly treated or ignored. In such cases permanent damage is often being done to the heart, although the child

may appear in fair health and make no complaint of the cardiac condition. A history of scarlet fever which was the probable cause of the cardiac condition was found in several cases. In no case had the parents previously been aware of the condition. Two pupils suffering from valvular disease accompanied by dilatation of the heart were excluded from school for some time.

(2) Functional Heart Affection.—Girls, 139 or 9·9 per cent. ; Boys, 136 or 10 per cent.

Alteration in the character of the blood—such as is found in anæmia—and lack of tone of the cardiac muscle are responsible for this condition in the majority of cases, and the presence of heart murmurs which are functional in character is an indication that a child is physically below par and anæmic. Treatment directed to the improvement of the general health is successful in the majority of cases in curing this condition.

(3) Anæmia. — Girls, 157 or 11·2 per cent. ; Boys, 139 or 10·2 per cent.

This condition was found to be in the great majority of cases associated with malnutrition, and to be dependent on practically the same causes for its origin. In seven cases where a marked degree of anæmia was found in under-nourished children exclusion from school was recommended.

(4) Arrhythmia.—Girls, 3 or ·21 per cent. ; Boys, 4 or ·29 per cent.

In the seven cases in which irregularity of cardiac rhythm was present no abnormality was remarked, and the children apparently suffered no inconvenience from the condition.

LUNGS.

(1) Bronchitis.—Girls, 17 or 1·2 per cent. ; Boys, 17 or 1·2 per cent.

During the winter months a great number of children were found to be suffering from slight catarrhal affections of the respiratory tract. This appeared to be due chiefly to the fact that they frequently arrived at school in a very wet condition, requiring to sit for several hours in damp clothes.

On their return home the clothing was again in many cases soaked, and by the next morning had only partially dried. If school cloak-rooms could all be provided with some heating appliance it would be a source of great benefit to the children. In one case the bronchial affection was acute and required exclusion from school.

(2) Asthma.—Girls, 2 or $\cdot 14$ per cent. ; Boys, 8 or $\cdot 58$ per cent.

This affection was found to be much more frequent among boys than girls, and in the greater number of cases appeared to date back to the age of four or five years. In many cases the disease appeared to be hereditary.

NERVOUS SYSTEM.

Total nervous affections.—Girls, 17 or $1\cdot 2$ per cent. ; Boys, 15 or $1\cdot 1$ per cent.

(1) Chorea or St. Vitus' Dance.—Girls, 1 or $\cdot 07$ per cent. ; Boys, 2 or $\cdot 14$ per cent.

Three mild cases of this affection were found, and in all cases exclusion from school for several weeks was recommended, as isolation and quietness, with lack of all excitement, are necessary points in the treatment.

(2) Nervous Habits.—Girls, 8 or $\cdot 57$ per cent. ; Boys, 5 or $\cdot 36$ per cent.

In all the cases where children were found to possess nervous habits they were of an unduly nervous temperament. The habit is occasionally imitative in origin, children suffering from acute chorea and mixing with their comrades, being found occasionally to be the cause of an outbreak of nervous affections—such as spasmodic twitching of the face, etc.—arising among their comrades. In many cases these habits can be overcome in early life by means of careful training.

(3) Epilepsy.—Girls, 3 or $\cdot 21$ per cent. ; Boys, 6 or $\cdot 44$ per cent.

In one case of this disease exclusion from school had to be recommended. In the majority of cases the children were able to attend school regularly for periods during which the fits were of rare occurrence or entirely absent. These periods

were followed by others during which frequent fits occurred, and it was impossible for the children to attend school.

(4) Infantile Paralysis.—Girls, 3 or .21 per cent. ; Boys, 1 or .07 per cent.

Infantile paralysis was found in every case to have had a partially crippling effect upon the children, permanent loss of power in certain groups of muscles remaining.

Facial paralysis of diphtheritic origin was found in one girl, and aphasia (motor) was present in the case of another girl who proved herself quite unable to write to dictation, but if given the book was able to copy correctly the same passages.

TUBERCULOSIS.

Total : Girls, 11 or .77 per cent. ; Boys, 16 or 1.16 per cent.

	Boys.	Girls.
Glandular - - -	7 or .5 per cent.	11 or 1.81 per cent.
Spine - - -	—	1 or .07 ..
Hip - - -	—	3 or .21 ..
Metacarpal bones of hand	—	1 or .07 ..
Abscess of soft palate -	1 or .07 ..	—
Pulmonary - - -	3 or .21 ..	—

Tuberculosis is a disease which may manifest itself in many ways, and attack many parts of the body. The disease manifests itself in children most frequently in affections of the lymphatic glands and bony tissues or joints. Boys were found to suffer from tubercular affections more frequently than girls, although the pulmonary affection was found to be definitely present only in girls.

Glandular Affection.—It is difficult in the absence of a definite test—such as the skin test of Von Pirquet, which is a delicate test similar in character to vaccination—to definitely assert that tubercular disease of the glands is present. In 18 cases, however, the glandular enlargement was of such nature and duration as to warrant the diagnosis of probable tubercular infection.

Bone and Joint Disease.—All the cases of bone or joint affection were found to occur among boys.

Abscess of the Soft Palate which was of tubercular origin was found in the case of one girl.

Pulmonary Affection.—Definite evidence of the existence of tubercular disease was found during the past year in three cases—all girls—and during the previous two months three cases were also found, in all five girls and one boy being found to suffer from pulmonary tubercle. Pulmonary affection is found in most cases to be of glandular origin in children, the lymphatic glands around the bronchial tubes and at the root of the lungs becoming primarily affected, the affection of the lung occurring as a secondary result. These cases of early disease of the bronchial glands can be diagnosed only in a few cases, the skin test before referred to being employed in many cases of a doubtful nature, and if positive affording evidence of the existence of some focus of tubercular affection.

In 40 cases—23 girls and 17 boys—symptoms suggestive of incipient tubercular disease were found, which were not sufficiently definite, however, to allow a diagnosis of tubercular disease to be made. These children suffered from malnutrition and anæmia and were of poor physique, flat-chested, and with deficient lung expansion. Such children were in several cases excluded from school attendance, the parents being advised to seek medical advice. In all cases the necessity was brought before them of securing for the children the best possible hygienic home conditions, and combining with this a more generous diet. These measures, combined with daily physical exercises of a not too strenuous type, and breathing exercises, caused a marked improvement to be found in many cases on re-examination. Children who from infancy upwards have been physically slightly below par require additional care when school life is entered upon. The demand which this makes upon the nervous energy and physical endurance of children is very great, and those who enter upon their school career handicapped by any form of physical defect or hereditary predisposition are much less able than normal children to withstand the strain of school life. The confinement for hours in rooms the air of which even with care cannot always be kept perfectly fresh, the insufficient

nourishment often taken in the morning and at mid-day, the frequent exposure to adverse weather conditions, and the daily physical exercise of walking often several miles, readily induce in such children states of defective nutrition and anæmia, which are too often the fore-runners of tubercular disease.

All cases of suspected tubercular disease have been noted as "observation cases," the children being called up for repeated examinations and their condition closely observed in order that if possible the disease may be arrested in an incipient stage.

Evidence of old tubercular disease of bones or joints was found in two girls and ten boys.

RICKETS.

Girls, 21 or 1·5 per cent. ; Boys, 35 or 2·5.

Rickets as a disease is associated in the public mind with cities and the over-crowded slums, yet it is not by any means unknown in country places. Although the deformities which were found to have resulted from this affection did not equal in severity those found in town children, many children were found to suffer from the effects of milder forms of the disease. "Pigeon chest" and slight curvature of the bones of the lower limbs were found in 53 children, while in three cases very marked deformities of the lower limbs were found in children who had until a few months previously lived entirely in cities.

Unfavourable home conditions and the deficiency of fat in the dietary are probably factors which contribute in great part to the incidence of the disease among children in the county.

DEFORMITIES.

Acquired—	GIRLS.		BOYS.	
Scoliosis - - - -	45	3·2 per cent.	65	4·7 per cent.
Scoliosis and Kyphosis -	—		1	
Torticollis ("wry neck") -	1		2	
Talipes (club foot) - -	1		3	
Flat Foot	—			

<i>Acquired—</i>	GIRLS.	Boys.
Deformity of Elbow due to dislocation - - - —		1
Pyæmic Scars causing contraction of muscle tendons 1		—
Amputation of left foot - —		1
Dupuytren's contraction of hand - - - - 1		—
Genu Valgum (knock knee) 1		—
<i>Congenital—</i>	GIRLS.	Boys.
Loss of power of right arm due to injury at birth - —		5
Absence of left forearm and hand - - - - 1		—
Malformation of right hand and webbing of fingers - 1		—
Webbing of fingers and toes —		1
Dislocation of hip - - 1		—
Tongue tacking - - - —		1
Bifid uvula - - - —		4
Cleft palate - - - 1 (operated on)		2 (operated on)
Hare lip - - - - —		1 „

Scoliosis or lateral curvature of the spine is an affection which is frequently found in children of school age, the greatest proportion of the cases examined being found to occur among children over 10 years of age, the highest percentage occurring at the age of 13. Many factors co-operate in the causation of lateral curvature, the most important being the following:—Loss of muscular tone, especially of the spinal muscles, lack of adequate support for the back when sitting, faulty positions in sitting and standing and asymmetrical movements of any kind which result in the muscles of one side of the body being developed in excess of those of the other side, as in the carrying of heavy weights, etc. In many of the country schools the furniture is old-fashioned and not suitable for children of varying age, and lateral curvature is readily induced in such cases. In the cases found to occur among the children examined faulty and one-sided postures were found in most cases, while in every case lack of muscular tone was a prominent feature. This loss of

muscular tone is a condition which is apt to occur in children of school age whose muscular development does not keep pace with their growth. The muscular tissues being flabby are unable to regulate adequately the movements of the body, the muscles acting on the spinal column on one side becoming over-active, while those on the other side are weak and unable to co-ordinate the action of the opposing group of muscles. This condition may be very largely prevented by the employment of suitable physical exercises which should be given daily to the children. This question will be discussed at length under Physical Exercises. The parents of children suffering from this affection were in most cases unaware of it. If, however, it was associated with Kyphosis or a condition of "round shoulders," shoulder straps had in many cases been applied, under the mistaken belief that the defect could be remedied by mechanical means.

Kyphosis ("round shoulders") was found to be present in a great number of children between the ages of 12 and 14, and in varying degrees was of such common occurrence that no attempt was made to classify the cases. This condition is found to arise from many of the same causes which are active in the case of Scoliosis.

PHYSICAL EXERCISES.

In regard to this matter a somewhat close investigation was made in order to ascertain to what extent the pupils in the county were receiving regular physical training, and what effect had been produced upon the children by the absence of such.

A most unsatisfactory state of matters was found to exist in the majority of schools. In certain town schools a drill instructor visited the schools weekly or fortnightly, and half or three quarters of an hour was then devoted by the pupils to physical exercises, while in many of the country schools the physical training of the children received little attention. The results found were such as were to be expected, a very

large percentage of pupils suffering from varying degrees of spinal curvature of some form. Further evidence of the neglect of physical education was afforded by the slouching gait and awkward carriage of too many of the children.

Physical education of children is of very great importance, and is effected by means of games and gymnastic exercises, the free and unstudied movements made during games being of equal value with the precise and carefully regulated actions of gymnastic exercises.

To be of any value physical exercises should be given daily. A weekly period allotted to this purpose is of practically no use, the children becoming readily fatigued by the unaccustomed exercises and gaining little benefit from them. Ten minutes or quarter of an hour daily given up to this purpose would be of the greatest value, and interfere very little with the other work. It is advisable, if possible, that the physical exercises should be given in the playgrounds, as respiration is quickened and inspiration is deeper during gymnastic exercises, hence it is important that the air inspired should be perfectly fresh. In wet weather this is frequently impossible, in which case the windows of the class-room should be freely opened during physical drill. Breathing exercises should always occupy a prominent place among the other exercises. The teachers are in most cases perfectly competent to teach and supervise the daily practice of the simpler physical exercises, the more complicated corrective exercises being given by a fully trained gymnastic instructor or instructress where this is possible. A short interval devoted to physical exercises may be appropriately arranged to succeed immediately a lesson which has made considerable demands upon the mental power of the children.

By means of daily physical exercise not only is the general physical condition of the child improved, spinal deformity prevented, and a free and erect carriage and bearing acquired, but both mentally and morally a good effect is also exercised. Many children in the country are slow and dull in manner and speech, due probably to the quiet life of the country not having trained and quickened thier faenlties and senses, as the con-

stant stimuli of town life have done in the case of children brought up in large towns. The necessity of responding alertly and instantaneously to the word of command quickens the mental activity of such children, and alertness and decision result. Both gymnastic exercises and "group games which demand the sacrifice of the individual to the general welfare of the team" do much to develop self-control in children, and, as important factors in the education of all children, should have a place in the daily curriculum of every school. In the case of the younger children some modification of the more formal gymnastic exercises is required, and exercises which are of the nature of games are substituted, which, while not making the same demands on the mental powers, give the more constant variety which is so essential in the case of young children.

INFECTIOUS DISEASE.

In regard to the occurrence of infectious disease in schools in the county a printed form has now been prepared—copies of which are issued to all the teachers—on which they are requested to enter the particulars of any case of infectious disease occurring among their pupils, immediately on its occurrence, and to forward this notification to the School Medical Officer. It is very important that all cases of infectious disease should be at once notified, in order that all possible measures may be taken to prevent infectious disease assuming an epidemic form.

Scarlet Fever.—During the past year this disease has visited almost every parish in the county, and although in no school has it affected large numbers of children, few schools have escaped without at least having an isolated case of the disease.

At Glenwhilly school four children attending school were found on examination to be suffering from a mild variety of scarlet fever, and five cases which were of a suspicious nature were excluded at Lewis Street School, Stranraer, and Longcastle and Garlieston Schools.

Lochans, Garlieston, and Leswalt Schools were closed for

ten days on account of an outbreak of scarlet fever. Nine special visits were paid to schools in connection with the occurrence of scarlet fever in them.

Measles.—Only isolated cases of this disease have occurred in the county during the year, few cases in all having been found among the school children, and the disease not having spread among the other scholars in any school.

Diphtheria.—A few cases of this disease have been found during the year, not more than one case occurring in any individual school. In one case the disease proved fatal.

Chicken-pox, Mumps, and Whooping Cough.—Chicken-pox and Mumps have both been epidemic throughout the county, and the majority of the schools have suffered severely from one or both of these diseases. Whooping cough has also been fairly widespread, but has not assumed such an epidemic form. Owing to the frequently long duration of infection it is exceedingly difficult to prevent this disease from spreading. Glenwhilly school was closed owing to an outbreak of whooping cough and mumps. It is difficult in cases of mild infectious disease to impress upon parents the necessity of keeping children at home and as far as possible away from other children. Such children are frequently seen to be mixing freely with other children, and are often sent back to school after a two or three days' absence.

RE-EXAMINATION.

The re-examination of those pupils who had been recommended for medical treatment was carried out if possible on the next official visit—three or four months later. If this was impossible, owing to their absence from school, the children were seen on the next opportunity. Owing to the continual movement of the children in the county from one school to another according to the district in which the parents obtain employment, it is difficult to avoid a considerable leakage in the re-examination results. Many of the pupils examined and recommended for treatment were also leavers, who, on the next official visit, were found to have left school.

It is unfortunately difficult to impress upon parents sufficiently the necessity for obtaining the medical advice which has been recommended. Many conditions for which treatment is required appear to them to be of no gravity whatever, and their assurance that the disease or defect has always been "in the family" is a sufficient guarantee of its harmless nature. Conditions which were very obvious or unfamiliar, and which even to the uninitiated were seen to exert an injurious effect upon the health of the children, were found to receive treatment in a much greater degree than diseases which were family possessions, and with the symptoms of which the parents had become all too familiar. Undoubtedly in a certain proportion of cases poverty was responsible for the failure to obtain treatment, many parents expressing regret that it was impossible for them to follow the advice given and obtain treatment for their children. The question of treatment has been taken up by several of the School Boards, and arrangements made to provide treatment in necessitous cases by the expenditure of the Government grant given for this purpose.

In the parishes of Mochrum, Garlieston, and Penninghame treatment has been given in this way by the local practitioners, great benefit to the children having resulted. It is to be hoped that the results in this respect may become increasingly better as parents realise the importance of attending to conditions which up till now have been considered as the unavoidable accompaniments of normal childhood.

TOTAL RE-EXAMINATION RESULTS.

	Total.	Girls.	Boys.
Number of children re-ex-			
amined - - - -	959	502	457
Treatment obtained - -	324 (33.7 %)	179 (35.6 %)	145 (31.7 %)
No treatment obtained -	630 (65.6 %)	319	311
Treatment			
obtained { Satisfactory -	133 (13.8 %)	64	69
{ Unsatisfactory -	141 (14.7 %)	85	56
324 cases. { Under treatment -	50 (5.3 %)	30	20

ANALYSIS OF RE-EXAMINATION RESULTS.

				Cases.
Enlarged tonsils and adenoids	{	Treatment obtained - - -		46
		No treatment obtained - - -		83
		Adenoids treated - - -		2
		Adenoids not treated - - -		2
Vision - - - -	{	Treatment obtained, 79 cases {	Oculist in city	9
			Optician in city	1
			Local practitioner	52
			Local jeweller	17
		No treatment obtained - - -		151
Teeth - - - -	{	Treatment obtained - - -		172
		No treatment obtained - - -		516
Skin - - - -	{	Treatment obtained - - -		27
		No treatment obtained - - -		11
Ear - - - -	{	Treatment obtained - - -		3
		No treatment obtained - - -		11
Eye - - - -	{	Treatment obtained - - -		5
		No treatment obtained - - -		7
Anæmia - - - -	{	Treatment obtained - - -		8
		No treatment obtained - - -		4
Heart - - - -	-	Treatment obtained - - -		2
Glandular suppuration - - -	-	Treatment obtained - - -		2
Lung - - - -	{	Treatment obtained - - -		2
		No treatment obtained - - -		2

ANALYSIS OF CASES RECOMMENDED FOR TREATMENT.

Shewing the number of children suffering from the various diseases and defects which required medical treatment.

Disease or Defect.	Number Recommended for Treatment.
Teeth - - - - -	953
Vision - - - - -	269
Tonsils and Adenoids - - - - -	182
Adenoids only - - - - -	18
Skin - - - - -	62
Physical weakness - - - - -	5
Heart - - - - -	5
Chest - - - - -	3
Eye - - - - -	16
Ear - - - - -	21
Anæmia - - - - -	12
Glandular suppuration - - - - -	1
Epilepsy - - - - -	1
Chorea - - - - -	1
Tubercular disease - - - - -	1
Total - - - - -	1550

ANALYSIS OF THE "SPECIAL CASES."

Shewing the defects for which they were presented by the head teachers, and the numbers presented.

Defect Noted.	Number Presented.	
	31st July, 1912—31st July, 1913.	May and June, 1912.
Tonsils and Adenoids	23	3
Cleanliness - - -	30	14
Skin - - - -	29	5
Chest - - - -	9	4
Mental - - - -	28	13
Glandular enlargement	4	2
Ear - - - -	32	7
Vision - - - -	120	54
Speech - - - -	16	7
Eye - - - -	6	1
Paralysis - - -	3	—
Deformity - - -	3	—
Epilepsy - - -	4	—
Physical weakness -	43	31
Infectious disease -	3	—
Aphasia - - - -	1	—
Anæmia - - - -	1	—
Nervous affections -	2	—
Injury to nose - -	—	1

EXCLUSIONS.

Cause of Exclusion.	Number of Children Excluded.
Pediculosis - - - - -	118
Scabies - - - - -	37
Impetigo - - - - -	15
Eczema - - - - -	5
Conjunctivitis - - - -	2
Keratitis - - - - -	1
Corneal ulcer - - - -	1
Physical weakness - - -	7
Scarlet fever - - - -	6
Chicken-pox - - - - -	1
Mumps - - - - -	1
Ringworm - - - - -	11
Chorea - - - - -	3
Bronchitis - - - - -	1
Heart affection - - - -	2
Epilepsy - - - - -	1
Tubercular disease - - -	2
Total - - - - -	218

MISCELLANEOUS DISEASES.

	Girls.	Boys.
Hernia - - - -	3	5
Fractured clavicle - -	—	1
Fractured rib - - -	—	1
Ganglion - - - -	1 (wrist)	1 (ankle)
Tumour of leg (lipoma) -	1	—
Thyroid enlargement -	2	—
Chronic Bright's disease -	1	—
Splenic leukæmia - -	1	—
Abnormal stoutness -	2	—
Burn of hand - - -	1	—
Gingivitis - - - -	1	—
Malaria - - - -	—	1
Mastitis - - - -	—	1
Operation for empyema (resection of rib) - -	—	1
Septic wounds of feet and hands - - - -	3	6
Paronychia - - - -	1	2
Enuresis - - - -	8	14
Stomatitis - - - -	—	1





TABLE(S)
RUN INTO
GUTTER